



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada



# National Report for Canada

ARHC Virtual meeting November 2021



Chris Marshall – Regional Director

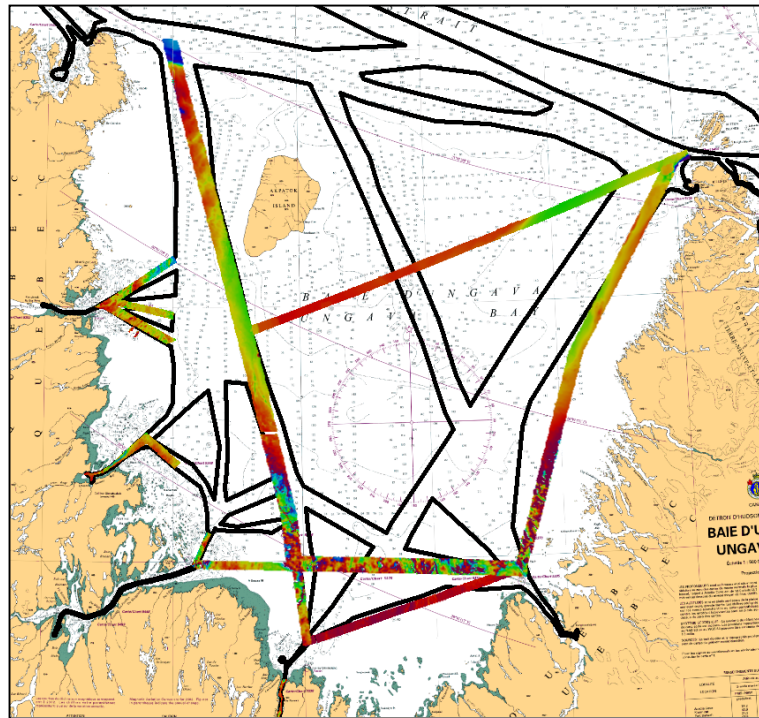
Ontario and Prairie, and Arctic Regions

Canada



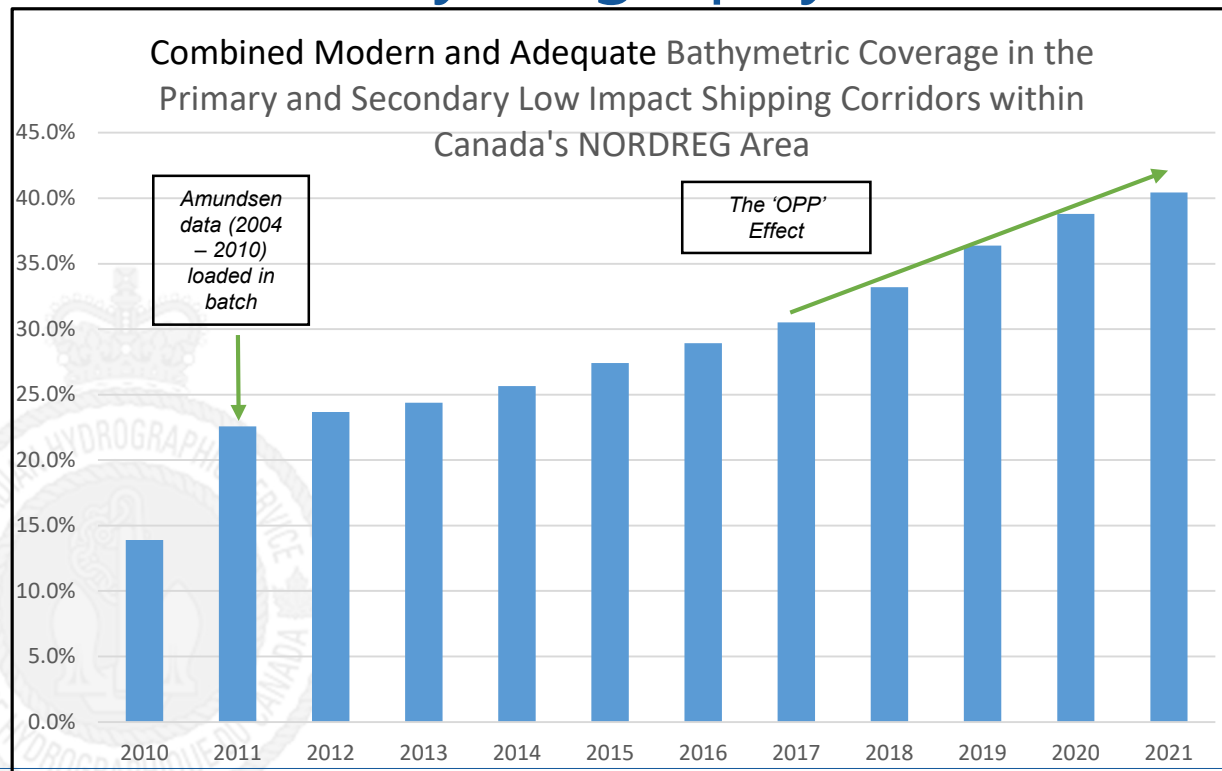
# Overview

- Status of Hydrographic Surveys in Canadian Arctic
- 2021 Operational Season overview
- Chart production work
- Update from DND
- Strategy for the future





# Status of Hydrography in the Canadian Arctic



Modern = CATZOC A1 & A2

Adequate = CATZOC B

Modern and Adequate data in combined Primary and Secondary corridors has increased from 30.5% in 2017 to **40.4% as of March 2021.**

Data collected this summer will be included by March of 2022.





# Review of the 2021 Arctic Survey Work

## Multi-beam Sonar Equipped Icebreakers

*CCGS Pierre Radisson*



*CCGS Louis S. St. Laurent*



*CCGS Amundsen*



*CCGS Des Groseilliers*



*CCGS Sir Wilfrid Laurier*

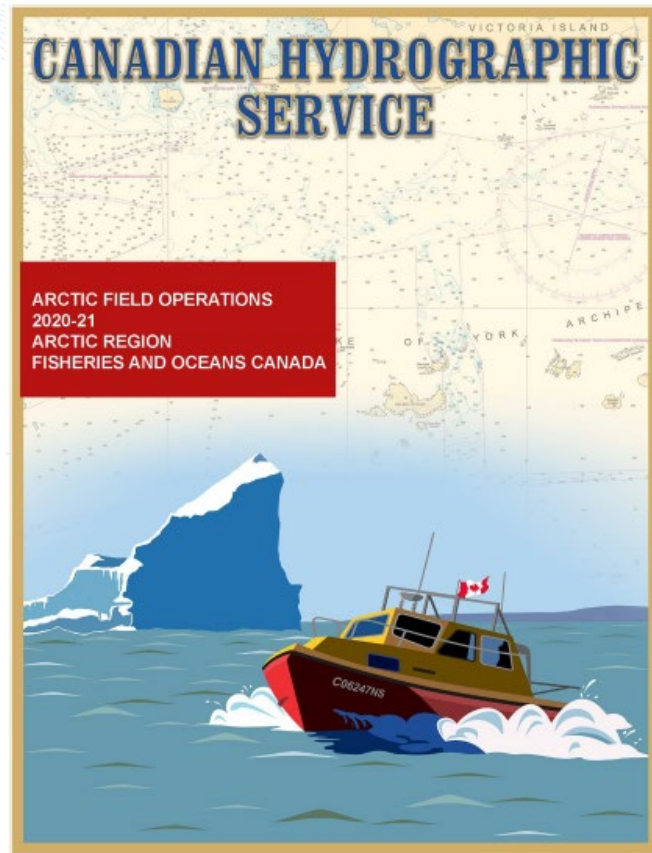


Important  
Hydrographic and  
Ocean mapping  
**capacity** --- CCG  
Larson MBES recently  
installed



# Summary of 2021 Survey Program

- Year 5 of the 5-year Ocean Protection Plan project
- Only **3** of the planned **5** CCG vessels were able to support CHS survey operations
- Were able to maximize work on the Des Groseilliers and Louis St. Laurent in the Eastern Arctic
- Nearly **32,000 Km<sup>2</sup>** of survey coverage!
- All 5 permanent tide gauge stations visited and maintained.



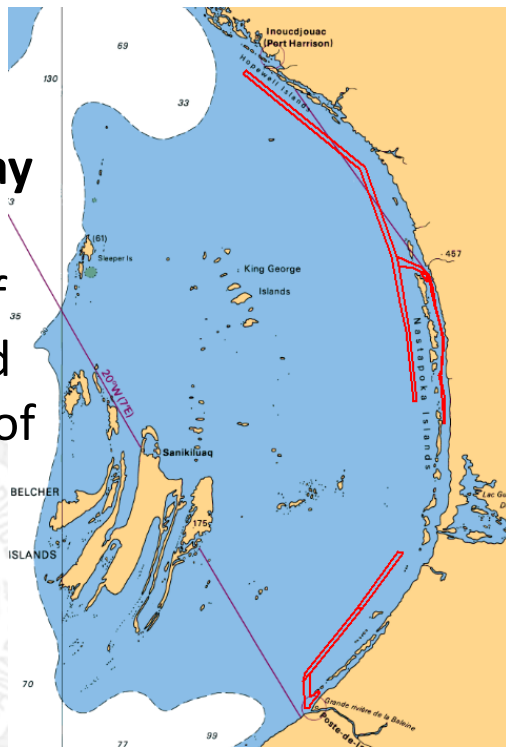




# Arctic OPP Contract Surveys 2021

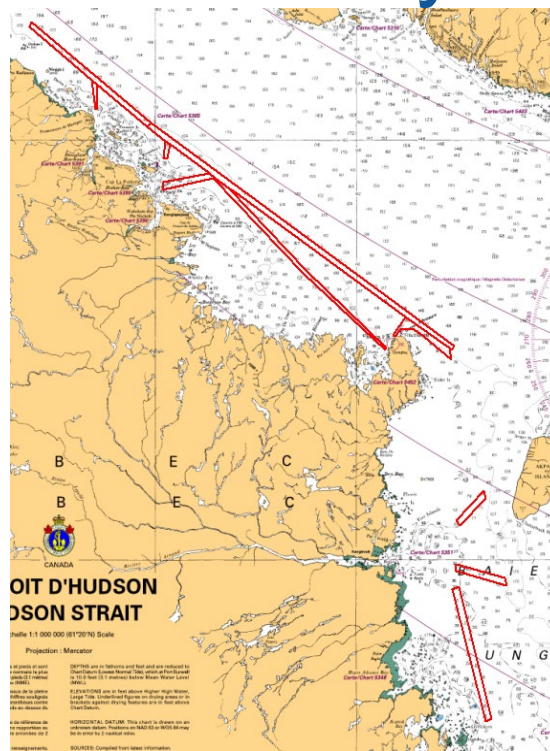
## Contract #1: SE Hudson Bay

~1900 Km<sup>2</sup> of  
data collected  
over 94 days of  
operation  
- USV used  
together with  
survey vessel



## Contract #2: Ungava Bay/Hudson Strait

IIC Technologies was  
selected as contractor  
following competitive  
procurement process





# Saw operational deployment of USV in the Arctic







# Filling Arctic ENC Gaps

Over the past year, 9 new ENC's produced,  
and 3 new editions released

- 59 NOTICE to Mariners

CHS Strategy - Prioritize and focus on the  
Arctic Corridors

- Build up digital/vector *foundational*  
*data*

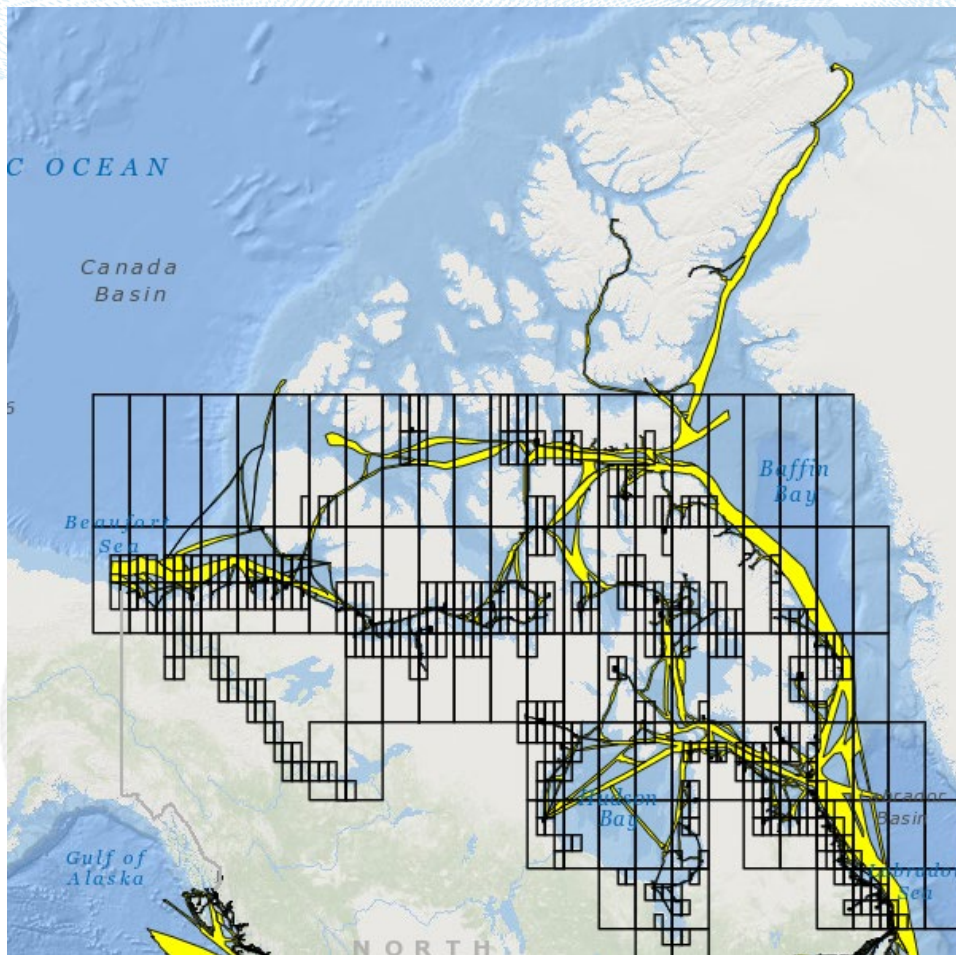
- **Phase 1:** Create first edition ENC to match  
Paper Chart limits – currently ~ 90%  
complete.

- **Phase 2:** prepare legacy bathymetry (load  
into BDB) and update ENC with new  
bathymetry on priority basis.

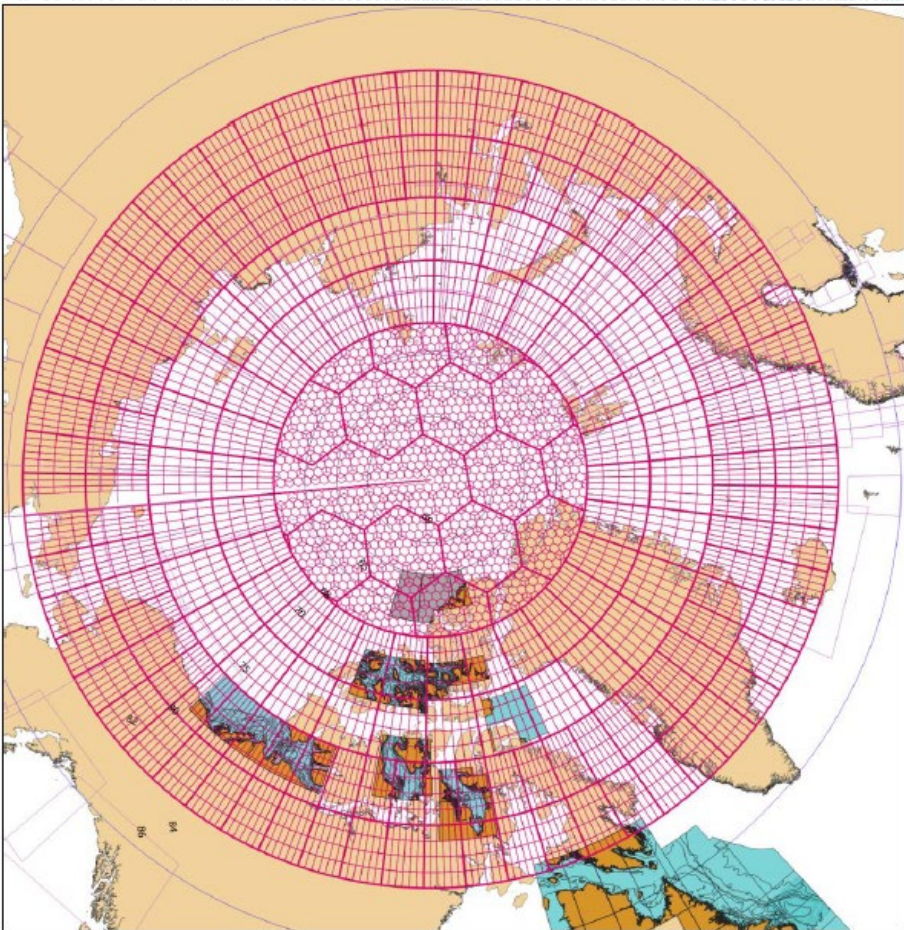


**By March 2022 it will be  
possible to navigate the  
primary NWP entirely on  
CHS ENC!**





- Canada's plan for ENC grids up to 76°N
- Maximum of 3 scale bands:
  - Overview (180 001 – 3 500 00)
  - Transit (22 001 – 180 000)
  - Port (1 – 22 000)
- Covers most of the open navigational area in Canadian Arctic
- Going further North stretches the North/South extent of the grid too much
- Digital foundation for future S100 services in the Arctic



- Report from IIC Technologies has made some recommendations on how to effectively and efficiently grid the polar cap
- One suggestion is a hexagonal grid
- Canada would be interested advancing this work via the Arctic International Charting Coordination Working Group





# Department of National Defence Update

- Hydrographic Services Offices (Halifax & Esquimalt)
- Distribution of navigation products to Govt of Canada fleets
- Support to CAF/RCN Operations and Exercises world wide
- Production of Additional Military Layers (AML)
  - NATO Co-Production Program (NACPP) & FVEYS Co-Production Program
- Production of Submarine ENC (smENC)
  - Primary navigation tool for RCN submarines & FVEYS partners
- Maintenance of DNC products in Cdn waters
- RCN Arctic Offshore Patrol Vessels (AOPV) update
  - HMCS Harry DeWolf circumnavigating North America, now on southern leg
  - HMC Ships Margaret Brooke & Max Bernays launched
  - Remaining three in various stages of construction



# Marine Incident – Grounding of Akademik Ioffe

Canada's **Transportation Safety Board** released a report earlier this year

## Key recommendations (in summary)

- Improved safety and oversight of passenger vessels travelling in Canadian Arctic.
- Improved voyage planning, and knowledge of Arctic navigation.
- Proactive monitoring of vessel movement, means to communication with vessels who deviate.
- CHS to support risk assessment of planned routes for passenger vessels.

## Arctic Cruise Ship Runs Aground in Canada's Northwest Passage



Akademik Ioffe sailing through loose ice in Paradise Bay. (Photo: Baron Reznik/Flickr)

Published at: Aug 28 2018 - 12:10 / Updated at: Jun 25 2020 - 15:06

Occurred August 24<sup>th</sup>, 2018, TSB report released earlier this year



# Looking ahead - CHS Arctic Strategy

## **Within the Low Impact Shipping Corridors:**

- Focus survey assets on LISC (still ~60% to complete)
- Maximize use of trusted source data collection.
- Fill charting gaps – prioritize the LISC with ENC at the appropriate scale with transition to new ENC grid (under development).
- ENCs will provide “Digital Foundation” for future S100 suite of services.

## **Outside the Low Impact Shipping Corridors:**

- Fully leverage remote sensing technologies (target detection and SDB)
- Work with industry, International partners (IHO) on innovative ways to communicate risk and inform planning
- Collaborate with third parties and Arctic communities on data collection (CSB).



# Thank-you Merci

For further information and questions please contact:

Chris Marshall

[Chris.marshall@dfo-mpo.gc.ca](mailto:Chris.marshall@dfo-mpo.gc.ca)

<http://www.charts.gc.ca>